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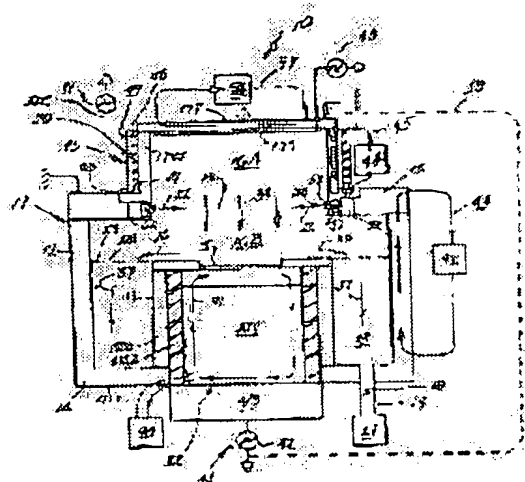
US

## (54) DEVICE AND METHOD FOR PLASMA PROCESSING USING INDUCTIVE RF COUPLING

(57)Abstract:

PURPOSE: To process a sensitive device and to improve yield, without damages and without use of micro-loading.

CONSTITUTION: This is a dome-type plasma-reaction-device chamber 11, and a device 30 such as an antenna, which is driven by RF energy electromagnetically coupled in the dome of a reacting device, is used. The antenna generated a high-density low-energy plasma for etching metals, dielectric substances and semiconductors in the chamber. Auxiliary RF bias energy, which is applied on the supporting cathode of a wafer 5, controls a cathode sheath voltage and controls ion energy, regardless of the density. Various magnetic/voltage- processing improvement technologies are displayed, together with an etching process, a vapor deposition process and an etching/vapor-deposition combining process.



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